

Name _____ Date _____

**Patterns and Relations
Unit 3 Line Master 1a**

Ways to Solve Linear Equations

1. Model then solve each equation. Use at least two different representations.
If you use concrete materials, sketch your representation.

a) $x + 8 = 14$

b) $6 + 2x = 12$

c) $14 = x + 7$

d) $2x + 3 = 17$

2. Solve each equation using a method of your choice.

a) $3x = 12$

b) $5 + 2x = 11$

c) $x - 2 = 9$

3. Sammy prefers to use only arithmetic to solve equations.

To solve the equation $3x + 2 = 17$, Sammy thinks:

“If 2 more than $3x$ is 17, then $3x$ must be $17 - 2$.”

$$3x + 2 - 2 = 17 - 2$$

$$3x = 15$$

Sammy says that if $3x$ is 15, then x must be $15 \div 3$.

$$3x \div 3 = 15 \div 3$$

$$x = 5$$

a) How can you relate Sammy's method to one of the models you use?

b) How does Sammy's method ensure that both sides of the equation remain equal?

c) Why might Sammy prefer this method over using a model?

4. Use Sammy's method to solve the equation $5x - 8 = -3$.